



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## THE POPULATION OF NEW YORK STATE\*

By ALBERT PERRY BRIGHAM

In 1798 an obscure clergyman in a country parish in England wrote an unsigned book which brought him into the light and gave him fame. The author was Malthus, the book was the "Essay on the Principle of Population," and the object was the "future improvement of society." Eight years before the curate wrote his essay, the United States had set the world its first example of a complete enumeration of the people without reference to special ends. The pattern thus set, the nineteenth century saw the unfolding of the census among all civilized people.

In 1810, in our own country, questions were asked about manufactures and in 1840 the farm was included. In later years the mines and fisheries were taken in, and a wide variety of economic and social queries. Now bulky volumes packed with data come from presses whose work is never done.

All this implies the deepening intimacy of man with the earth. What people are, where they came from, how long they have been there, with what measure of power they use the forces and fruits of nature,—these are questions to be answered, and they belong jointly to geography, to social and industrial science, to race and to history. What fullness of meaning there is in the distribution of people was recognized by one of our foremost economists.<sup>1</sup> "The widest and most controlling condition of our status on earth is the ratio of our numbers to the land at our disposal. . . . From one point of view history may be regarded as showing the fluctuations in the ratio of the population to the land."

The distribution of population may be said to involve the whole of human geography. Whether in a region the density be one or a thousand, there are reasons for it. To know these reasons we must open the whole field of reaction between man and his environment.

At the last federal enumeration New York had a population density of 191. This fact standing alone means little, but the view widens when we compare Illinois, with her richer fields, facile transportation, and her density of 101; or when we see that no state beyond the Mississippi River averaged half a hundred to the square mile.

All Canada holds fewer human occupants by millions than the Empire State. It is no simple question of latitude, soil, and climate, as witness the natural riches of Nova Scotia, Ontario, Manitoba, British Columbia, or the Yukon. Nor does geography, unaided by sister sciences, tell us why

---

\* Read at the third joint meeting of the Association of American Geographers and the American Geographical Society, April 14 and 15, 1916.

<sup>1</sup> W. G. Sumner: *Earth Hunger and Other Essays*, pp. 32, 37.

New York in the last census decennium added more people to her number than the entire population of Mississippi, Kansas, Louisiana, or South Carolina.

We may take all of the states of New England except Maine, throw in New Jersey and Delaware and find remaining in New York enough land to equal three-fourths of Massachusetts. By eastern standards, New York with her 47,000 square miles is large. But there are in the Union twenty-eight larger states. It would require more than two New Yorks to cover Colorado, Arizona, or Nevada, more than three to be equal to California and more than five to match Texas. By western standards the Empire State is small. She recovers her dignity, however, if she looks across the sea and finds that she is nearly as large as England and about equals the combined area of the Netherlands, Denmark, Switzerland, and Montenegro.

The population of New York in 1910 was 9,133,614 and the density was 191. In 1915 the population had risen to 9,678,744, and the density was 203. In five years each average square mile had gained twelve new inhabitants, more than the total density of eleven of our states in 1910. In that year ten states showed a density exceeding 100. Of these, three are in New England, three in the Middle Atlantic group, two, Maryland and Delaware, are South Atlantic states, and two, Ohio and Illinois, are in the North-Central region. We need no further evidence to show how heavily the northeast balances the rest of the country and to explain why for decades the center of population has been making a dilatory movement across the state of Indiana.

In 1915 New York assumed rank, with three New England states and New Jersey, among the five that have passed the two hundred mark. In this connection the following comparison of densities is not without interest:

Italy .....	1914	321
Austria .....	1910	247
Hungary .....	1910	166
Austria-Hungary .....	1910	204
New York .....	1915	203

Recurring now for purposes of comparison to the figures of the Thirteenth Census, New York need not fear her showing with southern New England. We will assume an area in southeastern New York that is about equivalent to Massachusetts (Fig. 1). It will include all of Long Island, all of the City of New York, the Hudson River counties as far north as Albany and Rensselaer, and Orange County, in all seventeen counties. Here is a territory slightly larger than Massachusetts, having a density of 697, while the figure for the New England state is 418.

If, as shown in the map, we push toward central New York and cover eight additional counties, we shall include areas slightly greater than the combined surfaces of Massachusetts, Rhode Island, and Connecticut. The density in the selected part of New York is 453, and the average density

of the southern states of New England is 360. Once more may New York enforce her claim as a busy hive of human kind. We take eight counties in western New York (Fig. 1). These do not look big enough to be a state, but they do not widely depart, in area or combined form, from Connecticut. The density is 219, as compared with 231 for the Nutmeg State.

Nearly all of the western New York tract is rich, arable land of the Great Lake plains and of the hills among the Finger Lakes. But a small share of Connecticut is equally adapted to tillage, and we are not there-

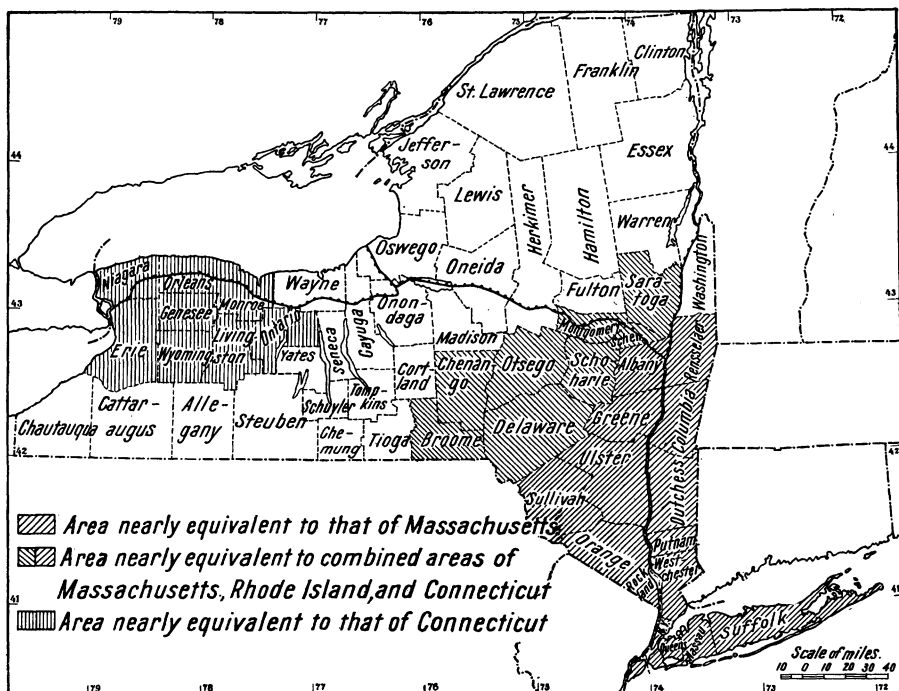


FIG. 1.—Outline map of New York state showing county names and comparative areas. Scale, 1:5,680,000.

fore surprised when we compare the urban and rural population of the two areas. In face of the fact that Connecticut has no cities that compare in population with Buffalo and Rochester, she has 89.7 per cent of urban people, while the New York region has 55.4 per cent. Connecticut surpasses in the number of large towns and small cities, having seventy-two towns in the urban class, i. e. ranking above 2,500 in population. The New York region has but twenty-five such centers. The eight counties have seven cities with a population for each exceeding 10,000, while Connecticut has twenty-one such cities. It is clear that western New York, in some possible future equaling Connecticut's industrial activity, would far surpass her in population.

The center of population is near the village of Forestine, in Sullivan County (Fig. 6). It is, as we should expect, well to the southeast, in fact scarcely seventy miles from New York City. The growth of the metropolis has held steady control over the movement of the center, which in 1880 was in the southern part of Delaware County. The southward movement has accelerated steadily, being 6.5 miles from 1880 to 1890, 9.5 miles in the next ten years and 11 miles during the decade ending in 1910. In this last period alone the center swerved westward, a result apparently due to large increases of population in western New York.

We consider now the growth of population in the state as a whole, and we approach the record through a comparison with four typical states, one

each in the New England, Southern, North-Central, and Western groups. We choose Massachusetts because she is like New York in diversified surface, industrial development, and accessibility to Europe. We select Alabama because that state is a good representative of southern agriculture, is open to the sea through an important port, and has, especially in iron,

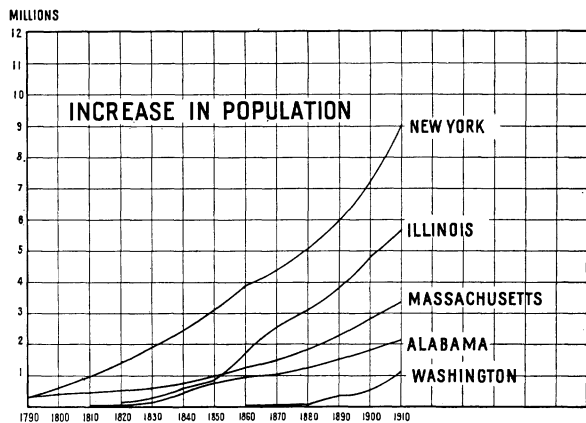


FIG. 2—Diagram showing the growth of population of New York state compared with that of other states.

an industrial status. Illinois is, in her group, the natural analogue of New York, being rich in agriculture, far progressed in her factories, and open by lake and prairie to the continent. Washington is chosen because she is similar to New York in size, in her proportion of agricultural land, and in her potentialities of trade. All of these states, except Massachusetts, have important mineral resources. Massachusetts and New York are, for America, old; Alabama and Illinois are in middle age; and Washington is in the period of lusty youth.

Our first comparison of these four states with New York has to do with the actual increase and present totals. These facts are shown in Figure 2, the growth being set forth from the periods of earliest available data. It is well to observe, however, that this basis of comparison, while instructive, does not, owing to the variable size of the states, tell us much about the intensive development. And this is the more true because the duration of periods of growth varies from fifty to one hundred and twenty years.

Observing the curves of Figure 2 it is to be noted that those for New York and Massachusetts are more consistently progressive than any others.

The curve for Illinois is somewhat irregular throughout, though it is consistent in showing moderate growth from 1820 to 1850 and strong growth from the latter date to the present time. Illinois is a close parallel to Alabama to 1850 and then advances notably, nearly doubling in the following decade. The only break in the curve for New York is for the decade of the Civil War. Illinois is less apparently affected, but the curve flattens a little toward the end of that period. Massachusetts keeps her course, and Alabama becomes stationary for several years. In the last decade, New York's growth is largest, followed in order by Illinois, Washington, Massachusetts, and Alabama.

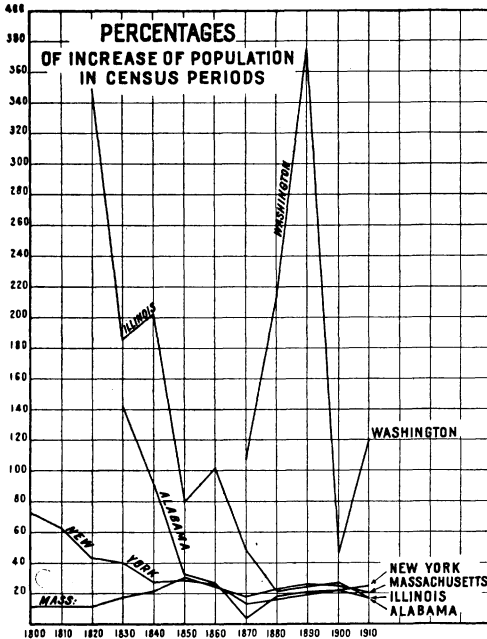


FIG. 3.—Diagram showing percentage of increase of population of New York state compared with other states.

swings alternates two decades of upward movement and takes her place with her sober sister states in 1880. Washington has not yet lived beyond the prodigal spurts of her youth.

In turning now to Figure 4 we have the record of comparative increase of density of the five states under observation. This, it seems, brings us to the real test, by a criterion more satisfactory than either of the others. Here, however, the test would be more effective if the development periods had been of equal length. For this reason we can make no satisfactory comparison of Washington with any of the others. She has not had time to develop her capacity. We can, however, compare Alabama and Illinois with their coincident periods of population growth. They are close parallels from 1820 to 1850, as in Figure 2, but in respect of density Illinois is below Alabama in the early period and passes her in 1850. But here again

the curves do not show the actual capacity of the two states, because of the differences of political and social régime to which these states have long been subjected. New York and Massachusetts, however, may be more hopefully set side by side, for both are northern states, both are on the Atlantic seaboard, having comparable climates, and a similar historical and social groundwork. All of the states which go back to the time of the Civil War show at least a slight retardation in their increase of density. In the last Census decade all the curves have steepened except that of Illinois.

We now turn to the distribution and movements of population within the state. In Figure 5 are shown decreases of population from 1900 to 1910. The decrease of total population occurred in fifteen counties, about one fourth of the counties of the state. Of these fifteen, one is wholly in the Adirondack and two, Lewis and St. Lawrence, are partly in that province. Nine are wholly in the great plateau which stretches from the Catskills to the western border of the state. Greene County is divided between the Hudson Valley and the Catskills, while Madison and Ontario lie partly in the plateau and partly in the Lake Plains. Decrease has affected the lands of high altitude, severe climate, and lean soils, mostly regions of dairy and forest.

The general distribution of the rural population is to be seen in the maps of the federal census. The outstanding fact is that the rural population is most dense in the neighborhood of the larger cities. Thus Rockland, Westchester, and Nassau are the only counties having rural densities above 90. Densities of the next grade, 45 to 90, reach to Montauk Point and up the Hudson through Ulster and Columbia Counties. They then are found in Albany, Oneida, Onondaga, Monroe, Niagara, and Erie Counties, all containing large urban centers. This grade of density is found in a few counties which have no cities, no doubt by reason of exceptional conditions of soil and climate. Orleans, Livingston, Wayne, and Seneca Counties are examples.

There is not a single county having this grade of density of rural popu-

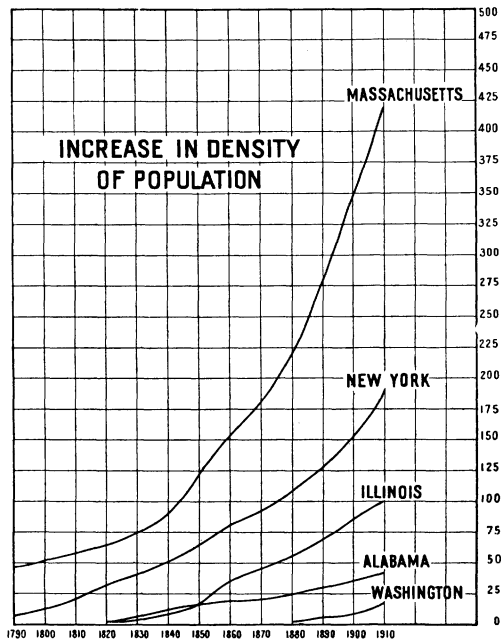


FIG. 4.—Diagram showing increase in density of population of New York state compared with other states.

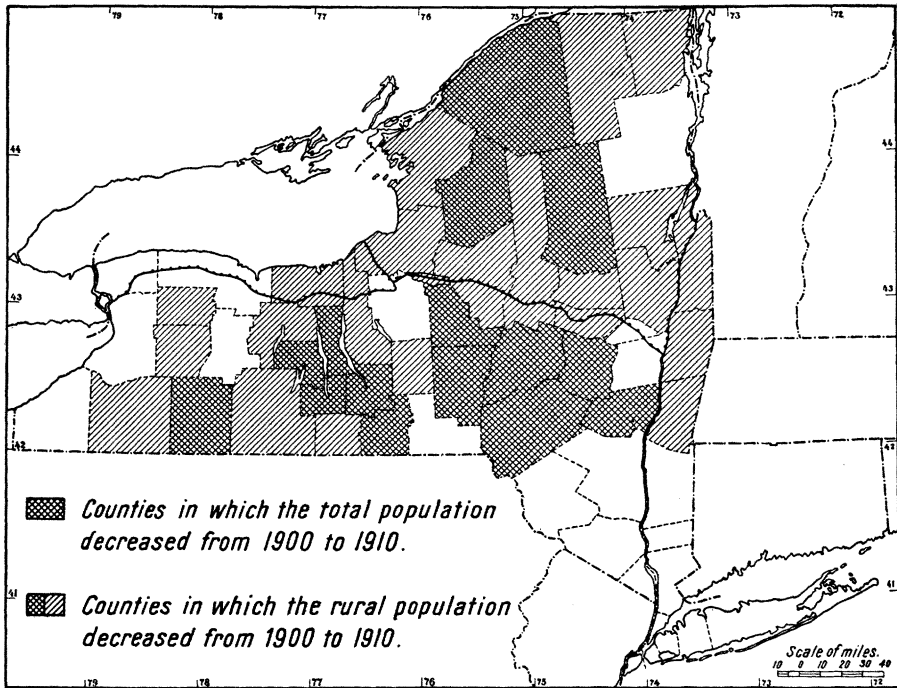


FIG. 5.

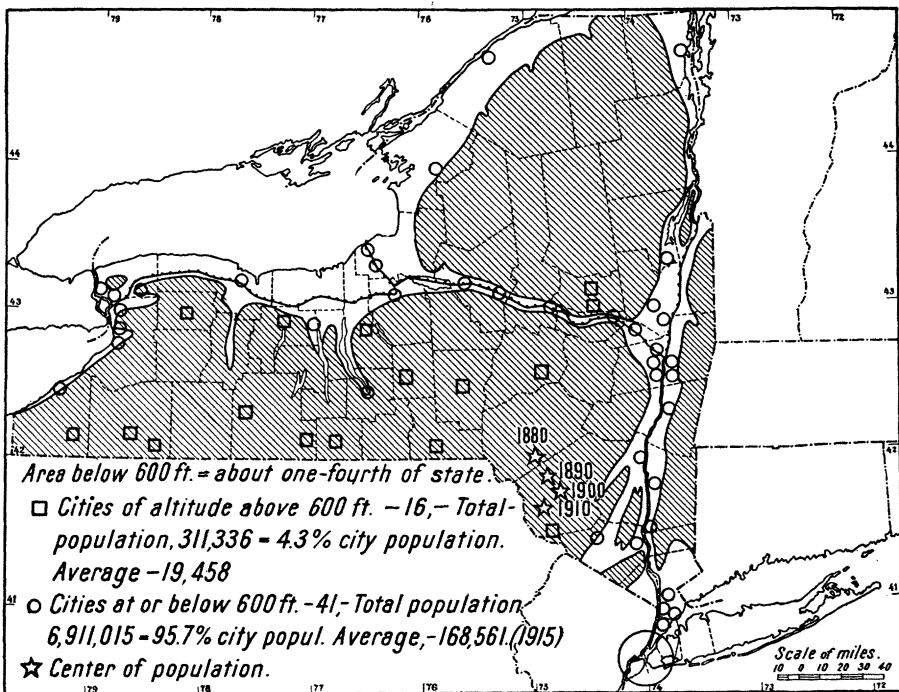


FIG. 6.

FIG. 5—Outline map of New York state showing the counties in which the total and the rural population decreased from 1900 to 1910.

FIG. 6—Outline map of New York state showing the relation of altitude to cities; also the movement of the center of population.



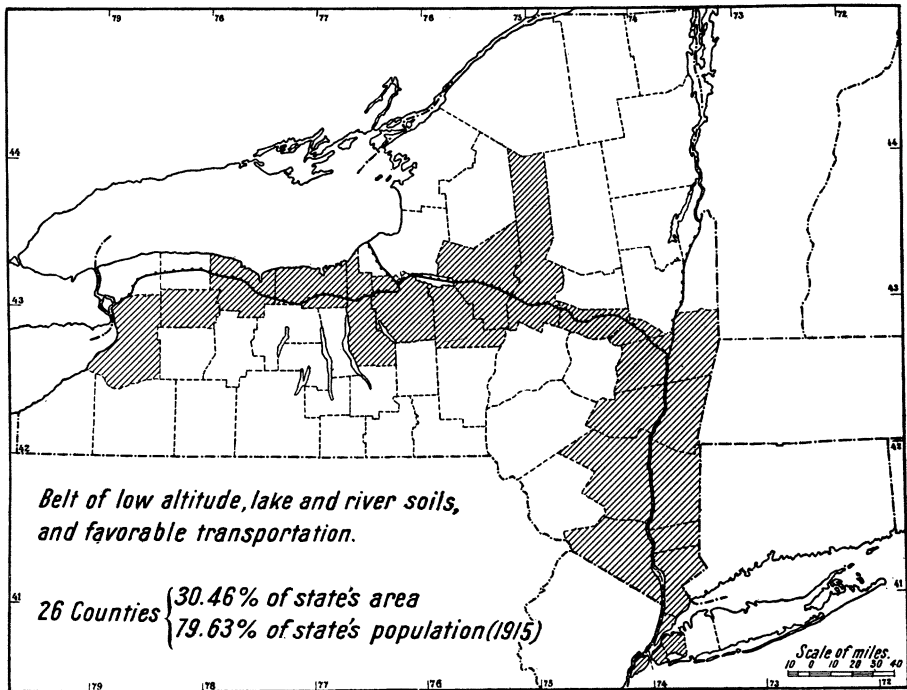


FIG. 7.

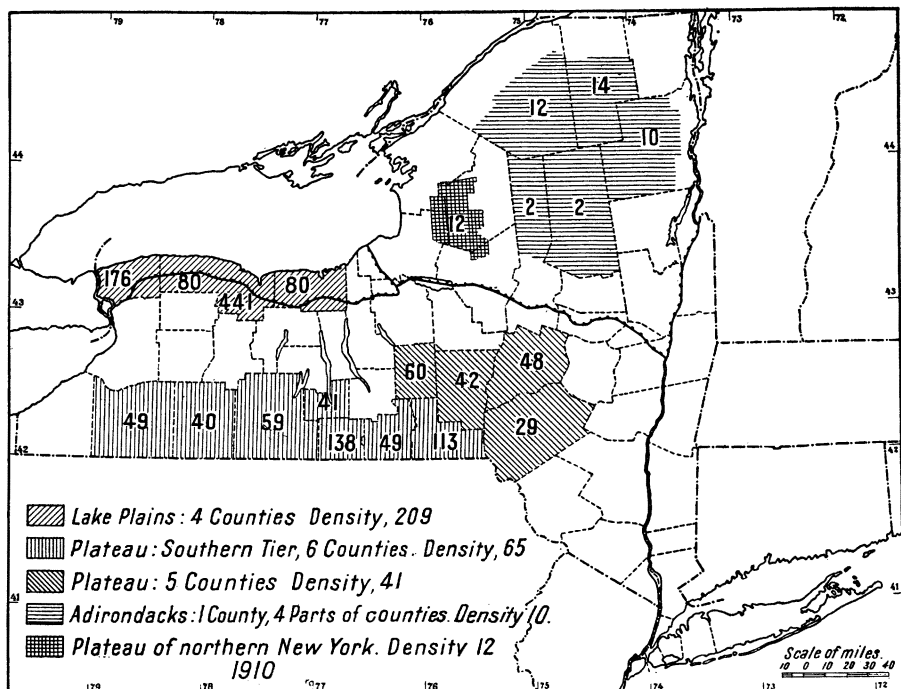


FIG. 8.

FIG. 7—Outline map of New York state showing the counties lying in the belt of low altitude, lake and river soils, and favorable transportation.

FIG. 8—Outline map of New York state showing the density of population of counties grouped according to physiographic regions. (Note: Schuyler County is incorrectly shaded; it should be included in the five plateau counties with a density of 41.)

lation in the "southern tier," from Sullivan to Chautauqua, nor a single example in the north and east from Oswego to Clinton, and from Clinton to Rensselaer.

The decrease of rural population in the last census period is more surprising than the losses of population as a whole, especially when we recall that the entire commonwealth had nearly two millions more people in 1910 than in 1900. The map (Fig. 5) shows that thirty-six counties out of sixty-one lost in rural residents. The rural population held its own in all regions lying approximately within one hundred miles of New York City. Beyond this limit only ten counties keep their rural status. All of these have urban centers except Orleans, Livingston, and Essex. Oneida is the only county having an urban center of more than fifty thousand people which did not hold its rural element. It is a bit curious that Oneida County, with the cities of Utica and Rome, should be in a different reckoning from Essex, an Adirondack county. It may perhaps be said that Essex had little to lose, much to gain.

It is not possible to give exact figures of the population in relation to altitude. Any contour lines crosses townships and election or school districts, and puts accurate data out of the question. Hence, choosing the contour of 600 feet, we will compare population centers, which stand in definite relation to such a line (Fig. 6). Approximately one-fourth of New York lies below this contour. There are in the state 57 cities, of which 16 are above the 600-foot line. These higher cities have an aggregate population of 311,336, giving an average of 19,458. Of the 41 cities on or below this line, the total population is 6,911,015, affording an average of 168,561. These figures are from the state census of 1915.

In addition to cities New York has 104 incorporated towns, each having a population of more than 2,500. Seventy-two of these are below the chosen contour, and their average population is 4,628. Thirty-two are above the line, and their average is 4,045. Of the hundred and more towns, thirty-five are a distinct response to the growth and needs of neighboring cities. Summarizing, all the urban population living below the line amounts to 6,781,547. The total for the greater altitudes is 440,804, or but 6.5 per cent of the whole. Thus it is as true in New York as in every part of the world, that people concentrate in regions of low altitude, of river, lake, and coastal-plain soils, of mild climate and easy transport.

We pass to what we may call a zone of cities and transportation, shown by shading in Figure 7. The map distinguishes twenty-six counties, chosen because they are traversed by the main lines of the New York Central Railway system between New York and Buffalo, or are directly served by them, as is the case with some of the counties of New York City. This belt of territory was described as regards its vital relation to the growth and trade of the United States in an earlier paper by the present writer.<sup>2</sup>

---

<sup>2</sup> The Eastern Gateway of the United States, *Geogr. Journ.*, Vol. 13, 1899, pp. 513-524.

Its significance as a population zone was set forth in a later paper<sup>3</sup> in which it was shown that it embraced about 30 per cent of the land surface of the state and held 77 per cent of the population. By the census of 1915 the precise figures are: area, 30.46 per cent; population, 79.63 per cent. Owing to the irregular extension of counties, the belt contains much thinly peopled land. Thus Greene and Ulster Counties reach far into the Catskill plateau, where villages are few and small and most of the land is covered with forest. The northern half of Herkimer County is in the Adirondack wilderness, with a density of 2 plus. A large part of Madison, Onondaga, and Cayuga Counties lies in the plateau, the line of traffic passing through the northern sections on the lake plains.

We should have a real test of concentration if we took a ten-mile strip from New York to Buffalo. The data are not available for such a computation, but if we take the series of townships crossed, it will come to much the same result. We shall have as a rule a single series of township areas in western and central New York, and a double series along the opposite banks of the Mohawk and Hudson Rivers, thus including the West Shore division of the New York Central lines. The average width of this belt is not far from ten miles, giving as a result, 6,910,131 people, or 70.87 per cent of the population on about 4,500 square miles, which form less than ten per cent of the territory of the state. This tract includes, except Binghamton, all the cities of New York whose population exceeds 50,000. It embraces also 28 of the 57 cities, while a dozen cities in adjoining counties are near at hand and are intimately dependent on this route.

Among the important criteria for the study of population is its relation to physiographic regions. Some attempt in this direction was made in compiling the statistics of the Twelfth Census, but studies of this nature are yet in their infancy, because we have as yet no accepted and detailed delineation of these provinces. This is true of New York as of other parts of the United States. Several natural regions can be outlined with a good degree of clearness for the state, and this will be attempted elsewhere by the writer. It is enough here to name certain well-known provinces such as the Appalachian Plateau, the Lake Plains, and the Adirondack region. Even if we had agreed upon boundaries, it would be difficult to determine population, for these lines cut all Census units of enumeration. But the density of typical parts of these regions offers a surer basis for study. Hence we take selected counties and parts of counties, whose populations are known. The areas for parts of counties are approximate.

Little comment is needed to supplement the map (Fig. 8). Four counties belong clearly and entirely to the Lake Plains province. Their soil is rich, their surface is easily tilled, the climate is favorable, and the transportation facilities are of a high order. Two contain cities and attain high densities, and two have no cities and show, by their common density

<sup>3</sup> The Distribution of Population in the United States, *Geogr. Journ.*, Vol. 32, 1908, pp. 380-389; ref. on p. 384.

of 80, highly developed rural conditions. The average density for the four counties is 209.

Six counties are taken in the Appalachian Plateau, in the "southern tier." They have high altitudes and are rather cold but are intersected by some broad and rich valleys. They have the advantage of an east-and-west transportation route, along the valleys of the Susquehanna and Chemung, which is second only to the route of the "eastern gateway." Two of the

counties have cities of some size, Binghamton and Elmira, and show large densities. The others have small cities or none at all and show densities approximating 50. The average for the six counties is 65.

Five counties from the same plateau are shown, which are similar to the others in surface and climate but sustain less favorable relations to through routes. Each of the counties but one contains a small city, but the average density drops to 41. In the Adirondack province we take one whole county, Hamilton, and four parts of counties, in Essex, Franklin, St. Lawrence, and Lewis. Here the surface is rugged, the soil poor, the climate severe, the surface mostly forested, and agricultural pro-

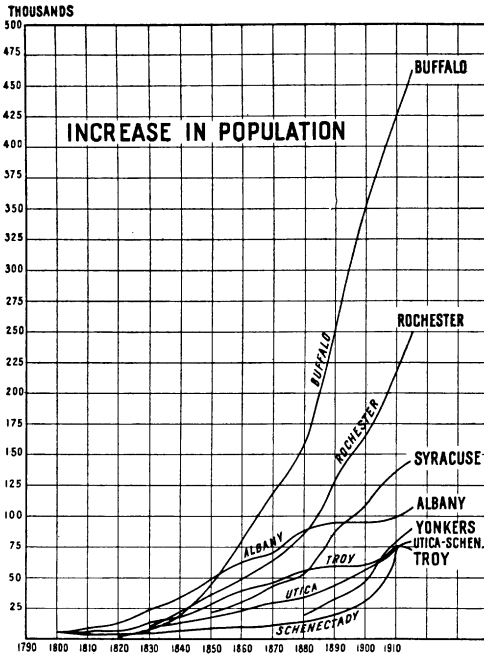


Fig. 9.—Diagram showing the growth of population of the cities of New York state of over 50,000 inhabitants (except Binghamton and New York City).

duction is at a minimum. The densities range from 2 in Hamilton County to 14 in part of Franklin County, and the average is 10.

A small sandstone plateau lies between the Black River and the lake lowlands. The map shows selected towns in the central and higher parts of this area. The region is forested and is as truly a wilderness as the Adirondacks, and the towns included support 12 persons for each square mile. It is hardly too much to believe that detailed and intensive studies of population in reference to such natural provinces will lead us toward the inner meanings of geography.

The scope of this paper permits of little attention to that large theme, the location and growth of cities as affected by geographic conditions. The curves in Figure 9 compare the growth of the cities of the Empire State which exceed 50,000 in population, excepting the greatest, New York, and

the smallest, Binghamton. They all have the advantage of the state's major route of transportation.

The three older communities, Albany, Troy, and Schenectady, had attained about equal size in 1800. All have had but a moderate growth and find themselves not widely apart in 1915. Albany and Troy show a falling off in the decade of the Civil War, and both move on a level or in slight decadence from 1890 to 1900. Troy alone shows a sharp decline, from 1910 to 1915. Schenectady has a more consistent curve, with a long, slow rise to 1880, the growth quickening to 1900, strong to 1910, with retarded increase during the past five years.

The curves record the population of Buffalo and Rochester first for 1820 and 1830, and show steady, rapid, and rapidly increasing growths since 1830. These communities were little if at all affected in population growth during the Civil War period. Utica arose as a town considerably earlier than Buffalo, but her course runs coincidently with that of Buffalo from 1820 to 1835, when the latter city diverges on its long climb and Utica shows a smooth ascending curve, with retarded growth from 1910 to 1915 in coincidence with Schenectady. Yonkers is a newcomer among the large cities of the state and is to be regarded as a satellite of New York.

We may observe concerning the four large cities, Utica, Syracuse, Rochester, and Buffalo, that the population rank rises from east to west. There is not space here to substantiate the view which the writer holds concerning these cities, which is, that geographic conditions make Buffalo inevitably great; and that in view of geographic conditions Utica should have been as large as Syracuse, and that neither should have been so far outrun by Rochester.

By American standards, New York has a high density of population, and a large fraction of the state may be marked off whose people live closer together than in any other equal area in this hemisphere. Her growth in recent years puts out of court the notion that the East has reached its goal and that the West only is alive. Population is gathering in the cities, but it is also growing on the farms near the cities, where, by intensive tillage, the possibilities of our soil and climate are coming to light.

As everywhere else in the world, the greater number live on the lowlands, but lowland and highland, field and forest, lake and sea offer that diversity which enriches the life of all. The cities of the commonwealth, barely touched in this essay, hold out an alluring invitation to the student of geography.

It was in the mind of the writer to say something about New York's capacity for population, but the limits of this paper are already outrun and the handling of this fascinating but rather dangerous theme must lie in the future.